

SEQUENCE LISTING

<110> Waldman, Scott A

<120> Metastatic Colorectal Cancer Vaccine

<130> TJU-2184

<140> 09/80237

<141> 1999-03-12

<150> PCT/US97/07565

<151> 1997-05-02

<150> 60/017,018

<151> 1996-05-03

<160> 2

<170> PatentIn Ver. 2.1

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<213> Homo sapiens

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Tyr	Lys	Asn	Gly	Thr	Glu	Thr	Glu	Asp	Cys	Phe	Trp	Tyr	Leu	Asn	Ala	
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Leu	Glu	Ala	Ser	Val	Ser	Tyr	Phe	Ser	His	Glu	Leu	Gly	Phe	Lys	Val	
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Asp	Tyr	Met	Lys	Asn	Val	Leu	Val	Leu	Thr	Leu	Ser	Pro	Gly	Asn	Ser		
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Leu	Leu	Asn	Ser	Ser	Phe	Ser	Arg	Asn	Leu	Ser	Pro	Thr	Lys	Arg	Asp		
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atc att ctg cgg aaa gaa acc ttc tac act ttg agc tgt cgg gac cgg	2181
Ile Ile Leu Arg Lys Glu Thr Phe Tyr Thr Leu Ser Cys Arg Asp Arg	
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aat gag aag att ttc aga gtg gaa aat tcc aat gga atg aaa ccc ttc	2229
Asn Glu Lys Ile Phe Arg Val Glu Asn Ser Asn Gly Met Lys Pro Phe	
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cgc cca gat tta ttc ttg gaa aca gca gag gaa aaa gag cta gaa gtg	2277
Arg Pro Asp Leu Phe Leu Glu Thr Ala Glu Glu Lys Glu Leu Glu Val	
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Tyr Leu Leu Val Lys Asn Cys Trp Glu Glu Asp Pro Glu Lys Arg Pro	
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gat ttc aaa aaa att gag act aca ctt gcc aag ata ttt gga ctt ttt	2373
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Gln Leu Tyr Ser Arg Asn Leu Glu His Leu Val Glu Glu Arg Thr Gln	
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Leu Tyr Lys Ala Glu Arg Asp Arg Ala Asp Arg Leu Asn Phe Met Leu	
785 790 795 800	
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Val Tyr Lys Val Glu Thr Ile Gly Asp Ala Tyr Met Val Ala Ser Gly	
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Leu Pro Lys Arg Asn Gly Asn Arg His Ala Ile Asp Ile Ala Lys Met	
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Pro Gly Leu Pro Ile Trp Ile Arg Ile Gly Val His Ser Gly Pro Cys	
915	920 925
gct gct gga gtt gtg gga atc aag atg cct cgt tat tgt cta ttt gga	2949
Ala Ala Gly Val Val Gly Ile Lys Met Pro Arg Tyr Cys Leu Phe Gly	
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Asp Thr Val Asn Thr Ala Ser Arg Met Glu Ser Thr Gly Leu Pro Leu	
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aga att cac gtg agt ggc tcc acc ata gcc atc ctg aag aga act gag	3045
Arg Ile His Val Ser Gly Ser Thr Ile Ala Ile Leu Lys Arg Thr Glu	
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Cys Gln Phe Leu Tyr Glu Val Arg Gly Glu Thr Tyr Leu Lys Gly Arg	
980	985 990
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995	1000 1005
aac ctg cca acc cct cct act gtg gag aat caa cag cgt ttg caa gca	3189

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 Thr Leu Glu Tyr Leu Gln Leu Asn Thr Thr Asp Lys Glu Ser Thr Tyr
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gttctcagtg aaataactac cttccactct ggaaccttat tccagcagtt gttccaggga 3566

gcttctacct ggaaaagaaa agaatttcat ttattttttg tttgtttatt tttatcgttt 3626

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Val Arg Gly Arg Leu Gln Asn Ala Gly Leu Asn Val Thr Val Asn Ala
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Thr Phe Met Tyr Ser Asp Gly Leu Ile His Asn Ser Gly Asp Cys Arg
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Ser Ser Thr Cys Glu Gly Leu Asp Leu Leu Arg Lys Ile Ser Asn Ala
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Gln Arg Met Gly Cys Val Leu Ile Gly Pro Ser Cys Thr Tyr Ser Thr
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Phe Gln Met Tyr Leu Asp Thr Glu Leu Ser Tyr Pro Met Ile Ser Ala
 130 135 140

Gly Ser Phe Gly Leu Ser Cys Asp Tyr Lys Glu Thr Leu Thr Arg Leu
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Met Ser Pro Ala Arg Lys Leu Met Tyr Phe Leu Val Asn Phe Trp Lys
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Thr Asn Asp Leu Pro Phe Lys Thr Tyr Ser Trp Ser Thr Ser Tyr Val
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Tyr Lys Asn Gly Thr Glu Thr Glu Asp Cys Phe Trp Tyr Leu Asn Ala
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Leu Glu Ala Ser Val Ser Tyr Phe Ser His Glu Leu Gly Phe Lys Val
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Arg Lys Ser Asn Val Ile Ile Met Cys Gly Gly Pro Glu Phe Leu Tyr
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Lys Leu Lys Gly Asp Arg Ala Val Ala Glu Asp Ile Val Ile Ile Leu
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Val Asp Leu Phe Asn Asp Gln Tyr Leu Glu Asp Asn Val Thr Ala Pro
 275 280 285

Asp Tyr Met Lys Asn Val Leu Val Leu Thr Leu Ser Pro Gly Asn Ser
 290 295 300

Leu Leu Asn Ser Ser Phe Ser Arg Asn Leu Ser Pro Thr Lys Arg Asp
 305 310 315 320

Phe Arg Leu Ala Tyr Leu Asn Gly Ile Leu Val Phe Gly His Met Leu
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Lys Ile Phe Leu Glu Asn Gly Glu Asn Ile Thr Thr Pro Lys Phe Ala
 340 345 350

His Ala Phe Arg Asn Leu Thr Phe Glu Gly Tyr Asp Gly Pro Val Thr
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Leu Asp Asp Trp Gly Asp Val Asp Ser Thr Met Val Leu Leu Tyr Thr
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Ser Val Asp Thr Lys Lys Tyr Lys Val Leu Leu Thr Tyr Asp Thr His
 385 390 395 400

Val Asn Lys Thr Tyr Pro Val Asp Met Ser Pro Thr Phe Thr Trp Lys
 405 410 415

Asn Ser Lys Leu Pro Asn Asp Ile Thr Gly Arg Gly Pro Gln Ile Leu
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Met Ile Ala Val Phe Thr Leu Thr Gly Ala Val Val Leu Leu Leu Leu
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Val Ala Leu Leu Met Leu Arg Lys Tyr Arg Lys Asp Tyr Glu Leu Arg
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Gln Lys Lys Trp Ser His Ile Pro Pro Glu Asn Ile Phe Pro Leu Glu
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Thr Asn Glu Thr Asn His Val Ser Leu Lys Ile Asp Asp Asp Lys Arg
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Arg Asp Thr Ile Gln Arg Leu Arg Gln Cys Lys Tyr Val Lys Lys Arg
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Val Ile Leu Lys Asp Leu Lys His Asn Asp Gly Asn Phe Thr Glu Lys
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Gln Lys Ile Glu Leu Asn Lys Leu Leu Gln Ile Asp Tyr Tyr Thr Leu
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Thr Lys Phe Tyr Gly Thr Val Lys Leu Asp Thr Met Ile Phe Gly Val
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Val Leu Tyr Asp Ile Ala Lys Gly Met Ser Tyr Leu His Ser Ser Lys
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Ile Ile Leu Arg Lys Glu Thr Phe Tyr Thr Leu Ser Cys Arg Asp Arg
 675 680 685

Asn Glu Lys Ile Phe Arg Val Glu Asn Ser Asn Gly Met Lys Pro Phe
 690 695 700

Arg Pro Asp Leu Phe Leu Glu Thr Ala Glu Glu Lys Glu Leu Glu Val
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Tyr Leu Leu Val Lys Asn Cys Trp Glu Glu Asp Pro Glu Lys Arg Pro
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Asp Phe Lys Lys Ile Glu Thr Thr Leu Ala Lys Ile Phe Gly Leu Phe
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His Asp Gln Lys Asn Glu Ser Tyr Met Asp Thr Leu Ile Arg Arg Leu
 755 760 765

Gln Leu Tyr Ser Arg Asn Leu Glu His Leu Val Glu Glu Arg Thr Gln
 770 775 780

Leu Tyr Lys Ala Glu Arg Asp Arg Ala Asp Arg Leu Asn Phe Met Leu
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Pro Glu Leu Tyr Glu Glu Val Thr Ile Tyr Phe Ser Asp Ile Val Gly
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Phe Thr Thr Ile Cys Lys Tyr Ser Thr Pro Met Glu Val Val Asp Met
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Leu Asn Asp Ile Tyr Lys Ser Phe Asp His Ile Val Asp His His Asp
 850 855 860

Val Tyr Lys Val Glu Thr Ile Gly Asp Ala Tyr Met Val Ala Ser Gly
 865 870 875 880

Leu Pro Lys Arg Asn Gly Asn Arg His Ala Ile Asp Ile Ala Lys Met
 885 890 895

Ala Leu Glu Ile Leu Ser Phe Met Gly Thr Phe Glu Leu Glu His Leu
 900 905 910

Pro Gly Leu Pro Ile Trp Ile Arg Ile Gly Val His Ser Gly Pro Cys
 915 920 925

Ala Ala Gly Val Val Gly Ile Lys Met Pro Arg Tyr Cys Leu Phe Gly
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Asp Thr Val Asn Thr Ala Ser Arg Met Glu Ser Thr Gly Leu Pro Leu
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Arg Ile His Val Ser Gly Ser Thr Ile Ala Ile Leu Lys Arg Thr Glu
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 1010 1015 1020

Glu Phe Ser Asp Met Ile Ala Asn Ser Leu Gln Lys Arg Gln Ala Ala
 1025 1030 1035 1040

Gly Ile Arg Ser Gln Lys Pro Arg Arg Val Ala Ser Tyr Lys Lys Gly
 1045 1050 1055

Thr Leu Glu Tyr Leu Gln Leu Asn Thr Thr Asp Lys Glu Ser Thr Tyr
 1060 1065 1070

Phe